Introduction

Our study documents the clinical spectrum of mammalian meat product allergy (MMP/AA) due to sensitization to galactose-alpha-1,3-galactose (alphagal), an emergent allergy in tick-endemic areas world-wide (van Nunen 2014, 2015).

Methods

A questionnaire was developed which enquired about demographic data (including blood type), details of diagnosis of alphagal allergy, history of tick bites, need for adrenaline auto-injector possession and atopy. Sources of alphagal-induced reactions were sought in food, cosmetics and medical exposures. Members of the private, international alphagal and A&AA Facebook sites were invited to participate and consent for publication obtained.

Results - n=314

- **Age range years**: 4-73
- **Non-B blood groups (A,O)**: 75.6% (164/217)
- **B blood groups (B, AB)**: 24.4% (53/217)
- **Cow’s milk**: 18.4% (58/314)
- **Bovine gelatine**: 11.4% (36/314)
- **Meat cooking fumes**: 59.8% (242/300)
- **Cow’s milk and yoghurt**: 45.9% (145/314)
- **Gelatine**: 45.5% (145/314)
- **Soft cheese**: 35% (109/314)
- **Hard cheese**: 35.6% (111/314)
- **Lamb**: 32% (101/314)
- **Venison**: 28.8% (89/314)
- **Fined wine**: 21.4% (66/314)
- **Goat**: 12.6% (39/314)
- **Fined fruit juice**: 12.5% (39/314)
- **Milk cooking fumes**: 8.9% (28/314)
- **Kangaroo**: 1.8% (6/314)

- **Tick bites not recalled**: 19.4% (58/300)
- **Recalled tick bite/s prior**: 80.6% (242/300)
- **Of those with asthma, eczema or allergic rhinitis almost 1/3 developed these after their MMP/AA; whilst 1/2 otherwise food allergic individuals developed these post MMP/AA**

- **Specific IgE to alphagal**: 65.2% (205/314)
- **Beef, lamb and/or pork**: 64.9% (204/314)
- **Female**: 77% (238/314)
- **From Australia**: 20/260
- **From USA**: 220/260
- **From Canada**: 2/260
- **From Sweden**: 18/260
- **Tick bites not recalled**: 18/260
- **Tick bites not recalled**: 18/260

Food reactivity - n=314

- **Beef**: 98.6%
- **Pork**: 86.9%
- **Meat cooking fumes**: 59.8%
- **Cow’s milk and yoghurt**: 45.9%
- **Cow’s milk**: 45.5%
- **Gelatine**: 35%
- **Soft cheese**: 35.6%
- **Lamb**: 32%
- **Venison**: 28.8%
- **Fined wine**: 21.4%
- **Goat**: 12.6%
- **Fined fruit juice**: 12.5%
- **Milk cooking fumes**: 8.9%
- **Kangaroo**: 1.8%

Medical exposures - n=314

- **Gelatine capsules**: 64.8%
- **Skin creams**: 30.6%
- **Tablets**: 24.6%
- **Bandaids**: 20.1%
- **Monoclonal Antibodies**: 4.43%
- **Sutures**: 2.7%

- **Experienced throat closure**: 46.6%
- **Impending loss of consciousness**: 30%
- **Loss of consciousness**: 12.8%
- **Adrenaline auto-injector prescribed**: 82.3%

Conclusion

In this severe allergy, widespread distribution of MMP/alphagal exposes sufferers to considerable risk of reaction in their daily lives and when presenting for medical treatment.

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